

Tropical seed beetles of the genus *Coccotrypes* Eichh.

99. Contribution to the morphology and taxonomy of the Scolytoidea

by

KARL E. SCHEDL

A consignment of seed beetles infecting *Astrocaryum* nuts, which has been sent to me by the Royal Institute for the Indies (Indisch Instituut) in Amsterdam, has given me the impulse to go over the extremely difficult genus of *Coccotrypes* Eichh. and check the species hitherto described as far as possible. This undertaking proved to be rather interesting and successful, especially as I possess quite a number of undetermined specimens myself, and others have been found in the inheritance of the late Forstrat Eggers as well. Moreover I had the opportunity to see types, cotypes or metatypes of most of the species and I have dealt with the genus once before.

The genus is distributed over the tropical and subtropical area only and none of the species is endemic to Europe. Within the tropics some of the species have been recorded from areas wide apart, but checking these specimens has revealed new forms in quite a number of cases, so that real circumtropical species probably are represented by *Coccotrypes dactyliperda* F. and *C. carpophagus* Horn only.

I can mention the following new records and synonymical notes :
Coccotrypes advena Blandf. = *Poecilips advena* Blandf.

Coccotrypes anonae Hopk. New record : Rio de Janeiro, 1.IX.1933
Dr. E. Eidmann. (Coll. Schedl).

Coccotrypes dactyliperda F. New records : Honolulu, T.H., 9.VII. 1936 (Coll. Schedl).

Renk, Sudan, VI.1921, A.F.T. Gedye (Brit. Mus).

Montevideo (Colon), 15.III.1939 (Coll. Schedl). ex *Cocos Weddeliana* (Coll. Schedl).

Mexico (ex. Coll. Eggers).

The species *dactyliperda* F., *eggersi* Hag., *moreirai* Egg. and *tanganus* Egg., of which I have types, cotypes or metatypes before me, can not be separated satisfactorily and I am inclined to regard them as one and the same species, *Coccotrypes dactyliperda* F.

Coccotrypes (Thamnurgides) sundaensis Egg.

New record : Honolulu.

Coccotrypes ghesquierei Egg. One paratype with the label Congo belge, Sankuru, IV.1925, ex *Elaeis guineensis*, leg. Ghes-

quièrè has proved to be a *Coccotrypes congonus* Egg. Apparently the label has been confounded.

Specimens from Ivory Coast, Bingerville, 29.VII.1944, on Palmtree, H. Alibert, recorded as *C. ghesquièrei* Egg. in my 90th contribution has also to be placed to *Coccotrypes congonus* Egg.

Coccotrypes conspiciendus Schedl and *Coccotrypes insularis* Egg. have to be placed in the genus *Poecilips* Schauf.

Coccotrypes carpophagus Horn. One specimen compared with the type by the late Forstrat Eggers, the type of *Coccotrypes integer* Eichh., a large number of Cotypes of *Coccotrypes nanus* Egg. and a cotype of *Coccotrypes brevis* Egg. i.l. before me show such accordance with regard to shape and sculpture that it can be concluded that they belong all to one and the same species. In any case it is not possible to draw up differences which would give the possibility for determining the species with any certainty and the direct comparison from specimen to specimen also does give no satisfactory results. *Coccotrypes carpophagus* Horn therefore seems to be distributed over the whole tropics from Central Africa to Mauritius, Siam, Java, Australia, and Brasil. Specimens from Winter Park, Florida, 24.X.1946, ex palmseed which have been named as *C. carpophagus* Horn. by W. H. Anderson, do not belong to that species, as suggested before, but to *Coccotrypes floridensis*, n.sp.

Coccotrypes pygmaeus Eichh. New record. Formosa, Sauter leg.

Coccotrypes thrinaxis Hopk. New record: ex *Lantana bourbonica*, patria not known. Rests of larval skins have been found in the rather soft fibrous mesokarp. A single beetle had bored through the fine but very hard shell (endokarp) and entered the seed itself, producing a somewhat curved cylindrical tunnel.

NEW SPECIES

Coccotrypes excavatus n.sp.

Dark reddish brown, 2.6 mm long, 2.36 times as long as wide. A species without any closer relatives in the genus, with a rather deep excavation on the elytral declivity.

Front rather narrow, plano-convex, densely and coarsely granulate-punctate, without any conspicuous pubescence.

Pronotum feebly wider than long (33:30), base transverse, postero-lateral angles feebly rounded when viewed from above, sides subparallel, feebly arcuate on the basal two fifths, thence gradually incurved to the narrowly rounded apex which is preceded by a faint subapical constriction, apical margin with numerous subequal low asperities, summit rather low and somewhat behind the middle, anterior area very obliquely convex and densely covered with very fine asperities which gradually are replaced by a granulate punctuation towards the base, pubescence extremely short and inconspicuous. Scutellum minute, shining.

Elytra as wide and 1.45 times as long as the pronotum, sides strictly parallel to distinctly beyond the middle, apex broadly and somewhat angulately rounded, subcylindrical on the basal three fifths, followed by an abruptly commencing broad impression which flattens out towards the apex; disc very densely and regularly punctured, striae and interspaces only difficult to separate, the striae indicated only; declivity with the lateral convexities high on the upper border, flattening out distally, the punctuation only feebly finer than on the disc, less dense along the suture which becomes elevated towards the apex of the declivity.

Type in the Brit. Museum of Natural History, cotype in coll. Schedl.

Locality: Seychelles Islands, Percy Sladen Trust, 1913—1914.

The two specimens in question have been mentioned by Sampson in his paper "*Platypodidae and Ipidae* from the Seychelles Islands" in Percy Sladen Trust Expedition, p. 391.

Coccotrypes subdepressus n.sp.

Dark reddish brown, 2.2 mm long, 2.27 times as long as wide. Allied to *Coccotrypes declivis* Samps. but the elytra more strongly cylindrical, the declivital aplanation steeper and with another type of sculpture.

Front moderately convex, subshining, very densely and coarsely granulate-punctate, the punctuation arranged in nearly circular rows, with a very short longitudinal carina below.

Pronotum feebly wider than long (28:26.5), postero-lateral angles broadly rounded, sides broadly arcuate on more than the basal half, thence followed by a distinct subapical constriction and at the same time incurved to the nearly unarmed, rather narrowly rounded apex, summit only moderately high, somewhat behind the middle, anterior area obliquely convex, densely covered with very small asperities, posterior area densely granulate-punctate, pubescence sparse but long. Scutellum of moderate size, shining.

Elytra only feebly wider and 1.47 times as long as the pronotum, humeral angles only very feebly rounded, sides parallel up to the middle, thence feebly convergent and at the extreme apex rather abruptly incurved to the broadly and somewhat angularly rounded apex, declivity commencing behind the basal two fifths, obliquely convex, aplanate below; disc with regular rows of fairly small, shallow, disc-like punctures, the interspaces wide, each one with a regular row of finer and more remotely placed punctures; declivity with the suture feebly elevated on the aplanate face, impressed along the first striae and part of the second interstice, thus producing low lateral convexities in the third interspace, the punctuation subequal on striae and interstices, somewhat deeper than on the disc, pubescence arising from the interspaces fine and long on the entire elytra.

Type in Coll. Schedl.

Locality: Amboina, F. Muir.

The only specimen was named *Coccotrypes subdepressus* by Eggers, but a description has not been found.

Coccotrypes cylindricus (Egg.i.l.) n.sp.

Dark reddish brown, 1.66 mm long, 2.3 times as long as wide. A peculiar species, very cylindrical, and with dense inclined pubescence on the elytra.

Front largely covered by the pronotum, as far as visible plano-convex, coarsely punctured.

Pronotum feebly wider than long (21:19), postero-lateral angles only hardly rounded, sides parallel on nearly the basal half, thence strongly and obliquely narrowed in a broad curve, apex rather narrowly rounded and with several subequal low asperities, summit moderately high, about in the middle, anterior area obliquely convex, very densely covered with small asperities, posterior area densely granulate-punctate, pubescence inconspicuous. Scutellum very small, shining.

Elytra as wide and 1.5 times as long as the pronotum, humeral angles only hardly at all rounded, sides parallel to distinctly beyond the middle, apex broadly rounded, declivity commencing shortly behind the middle, evenly but rather steeply convex; disc very densely punctured in fairly regular rows, the punctures of the striae about as large as those of the interspaces, on the declivity the rowlike arrangement less distinct, from the interspaces punctures of the entire elytra arising moderately long semi-erect hairs.

Type in Coll. Schedl.

Locality: Crucos, Cuba, leg. A. Bierig, 14.VII.1929.

Coccotrypes surinamensis n.sp.

Piceous to black, 2.2 mm long, 2.3 times as long as wide. More closely allied to *Coccotrypes palmarum* Egg. but the elytra more cylindrical, the declivity commencing shortly before the middle and with a slight longitudinal depression along the suture.

Front broadly convex, radiate-aciculate, fairly shining, subglabrous.

Pronotum as long as wide, widest shortly behind the middle, sides feebly arcuate to subparallel on the basal half, thence gradually incurved to the distinct subapical constriction and the rather broadly rounded apex, the apical margin with several low and subequal asperities, summit rather high, anterior area rather steeply convex, densely and finely asperate, posterior area granulate-punctate, with rather wide and polished interspaces in the median portion, pubescence inconspicuous. Scutellum very small, shining.

Elytra as wide and 1.3 times as long as the pronotum, humeral angles only very feebly rounded, sides parallel up to the middle, thence very gradually narrowed in a curved line, apex rather broadly and feebly angulately rounded, declivity commencing in the middle, evenly convex, with a very slight but distinct longitudinal depression along the suture; disc with rows of medium sized, shallow, disc-like punctures, the interspaces shining, each with a row of

punctures, but these are smaller, appearing as made with a needle from behind, thus producing a feebly raised front margin, on the declivity the striae punctures still more shallow but more densely placed, the interspaces punctures appearing more like minute granules, the longitudinal depression extending to the second interstice, the feebly raised lateral convexities in the height of the third interspace, pubescence very fine, erect and of moderate length.

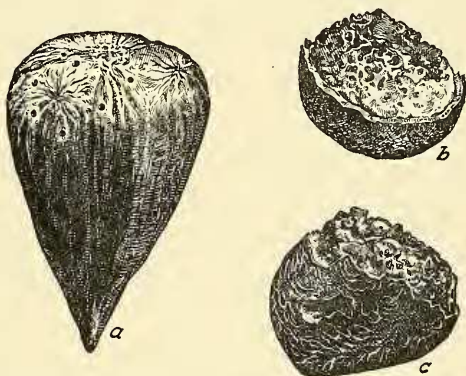
Types in the Zoölogical Museum at Amsterdam and Coll. Schedl.

Locality: Suriname (= Dutch Guayana), ex Boegroe Makka nuts.

A number of dead beetles have been found in Boegroe Makka nuts. One beetle just had bored through the extremely hard nut shell and had commenced feeding in a short cylindrical tunnel.

Damage caused by *Coccotrypes surinamensis* n.sp. to Boegroe-Makka nuts (*As-trocarym*, very probably *A. murumuru*).

- a. nut shell, showing exit holes of the beetles.
b. and c. galleries in the interior of the nuts.



According to the different diameter of other tunnels and considering the fact that besides mature beetles of dark colour immature yellow ones have been found it can be assumed that the development of the larvae also takes place within the nuts. The galleries are very irregular in arrangement, except on some places immediately under the nut shell where a layer of the seed has been fed up corresponding about the diameter of a beetle. Perhaps here the young beetles gather either for mating or before leaving the nut in their search for new breeding places.

Coccotrypes floridensis n.sp.

Reddish brown when mature, rather shining, 2.0 mm long, 2.2 times as long as wide. More closely allied to *Coccotrypes ceylonicus* n.sp. and *C. punctulatus* Egg., but with the asperities of the anterior part of the pronotum much more remotely placed and the elytral declivity much more obliquely rounded.

Front rather strongly convex, densely radiate-acciculate, the epistomal margin deeply emarginate medially.

Pronotum feebly wider than long, widest after the apical three fifths, postero-lateral angles not rounded, therefore closely

applied to the elytra, sides feebly divergent on the basal two fifths, thence rather strongly incurved to the well developed subapical constriction, apex moderately narrowly rounded, with a few minute asperities not connected at their base, summit moderately high, distinctly behind the middle, anterior area obliquely convex, remotely and very finely asperate, thus leaving wide polished interspaces between the asperities, posterior area somewhat more closely granulate punctate. Scutellum minute, shining.

Elytra somewhat wider than the pronotum, 1.42 times as long as wide, sides parallel on the basal third, from there gradually and evenly narrowed in a broad curve to the moderately broadly rounded apex, declivity commencing after the basal third, obliquely convex; disc with very regular rows of rather small and shallow punctures, the punctures as far apart as their diameter, interstices also uniserially and regularly punctured, the punctures decidedly smaller, much farther apart; declivity with the stria punctures distinctly larger and much more closely placed, the interstices less polished, somewhat reticulate.

Types: one series of types in Coll. Schedl, another in the U.S. National Museum in Washington.

Locality: Winter Park, Florida, 24.X.1946, in Palm seeds, H.Y. Gouldman.

The specimens in question had been determined as *Coccotrypes carpophagus* Horn., but comparison with a metatype and the type of *C. integer* Eich., which is synonym to the former, has proved that they have little in common with each other.

Coccotrypes pilosulus n.sp.

Piceous, 2.2 mm long, 2.35 times as long as wide. Allied to *Coccotrypes magnus* Bees. and *C. borassi* Bees., smaller than the former; from the latter to be distinguished by the feebly serrate anterior margin of the pronotum, the less sloping elytral declivity etc.

Front plano-convex, radiate acciculate and with a fine longitudinal carina below, subimpunctate above.

Pronotum about as wide as long, widest shortly behind the middle, postero-lateral angles including an angle of somewhat more than 90 degrees, not round, therefore closely applied to the elytra, sides divergent on the basal two fifths, thence gradually incurved to the rather narrowly rounded apex, which shows but faint indications of asperities, summit moderately high, shortly behind the middle, anterior area obliquely convex, very densely covered with small subequal asperities, posterior area granulate-punctate, pubescence sparse (abraded?), long and fine. Scutellum rather large, shining.

Elytra only feebly wider than the pronotum, 1.45 times as long as wide, humeral angles rectangular and not rounded, sides strictly parallel in the basal half, apex broadly and somewhat angulately rounded, declivity commencing in the middle, evenly convex; disc with rows of medium sized punctures, the interstices

uniseriately punctate but the punctures somewhat finer and more remotely placed; declivity with the suture feebly raised, the first striae feebly impressed, the stria punctures more distinctly defined, disc-like, those of the interspaces much finer than on the disc, pubescence long, fine and dark.

Type in Coll. Schedl.

Locality: Kurando, Q. (apparently Queensland Australia).

Coccotrypes pubescens n.sp.

Dark reddish brown, 1.7 mm long, 2.27 times as long as wide. Allied to *Coccotrypes thrinacis* Hopk. and *C. robustus* Eichh.; the declivity more evenly convex than in the latter, the apical margin of the elytra more angulately rounded than in *C. thrinacis* Hopk.

Front fairly convex, densely and finely radiate-aciculate.

Pronotum feebly wider than long, widest just behind the middle, postero-lateral angles including more than 90 degrees, not rounded, therefore closely applied to the elytra, sides distinctly divergent in the basal two fifths, thence incurved to the moderately broadly rounded apex, subapical constriction very feebly developed, apical margin with several subequal asperities not connected at their base, summit moderately high, distinctly behind the middle, anterior area rather densely covered with small asperites, posterior area granulate-punctate, the rugae themselves not longitudinally arranged as in *C. thrinacis*. Scutellum moderate in size, shining.

Elytra only feebly wider than the pronotum, 1.43 times as long as wide, sides subparallel on the basal third, thence gradually narrowed in a very shallow curve to the moderately broadly and distinctly angulately rounded apex, declivity commencing after the basal third, evenly convex; disc with regular rows of medium sized, shallow, disc-like punctures, interstices rather narrow, each with a row of more remotely placed smaller punctures which look under a certain light like minute granules; declivity with the stria punctures much more closely placed and somewhat larger but not deeper, in the interstices the punctures more plainly replaced by minute granules, rather densely pubescent.

Type in Coll. Schedl.

Locality: Cuba, Sierra Bonilla, V.1929, leg. Bierig. The single specimen has been found in the leftovers from the late Forstrat Eggers.

Coccotrypes ceylonicus n.sp.

Reddish brown, 2.0 mm long, 2.2 times as long as wide. Rather closely allied to *Coccotrypes theae* Egg. and *C. pygmaeus* Eichh., from the former being distinguished by the more pronounced anterior asperities of the pronotum, the less sloping elytral declivity and the punctuation of the elytra.

Front plano convex, shining, densely aciculate, sparsely hairy.

Pronotum wider than long (25:21.5), widest at the base, sides subparallel on the basal fourth, from there at first more gradually, then more abruptly curved to the apex, the apical margin

armed with six rather prominent asperities and narrowly rounded, summit rather high, shortly behind the middle, anterior area fairly densely asperate, posterior area granulate-punctate, the density being about equal all over the surface, leaving shining interspaces between the punctures and asperities respectively, pubescence rather sparse, moderately long and erect. Scutellum small and shining.

Elytra feebly wider (26:25) and 1.6 times as long as the pronotum, sides parallel on the basal third, thence feebly constricted to beyond the middle, more strongly so behind, apex moderately broadly rounded, declivity commencing after the basal two fifths, obliquely convex; disc with rather regular rows of medium sized punctures, the punctures as far apart as their diameter, each interspace with a similar row of punctures, but those slightly smaller and more remotely placed than in the striae, leaving rather large shining spaces between the two series of rows; declivity with the stria punctures becoming smaller, but still very distinct, the striae very feebly impressed, the interspatial punctures also somewhat smaller, pubescence twofold, longer, erect hairs arising from the interspatial punctures, short and inclined ones from the punctures of the striae.

Types: two specimens, one in the Brit. Museum of Natural History, the other one in Coll. Schedl.

Locality: Ceylon.
